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| 09/932,718 | 08/17/2001 | Steve R. Jahnke | TI-30253 | 6240 |

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| EXAMINER |
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HUYNH, KIM T

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| ART UNIT | PAPER NUMBER |
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2112

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,718

Applicant(s)

JAHNKE ET AL.

Examiner

Kim T. Huynh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-11 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith (US Patent 6,629,178)

As per claim 1, Smith discloses a data transfer system comprising:

- a plurality of first bus devices, at least one first bus device being a first bus data supplying device capable of supplying data, at least one first bus device being a first bus data receiving device capable of receiving data and at least one first bus device being a first bus master device capable of requesting and controlling data transfer; (col.5, lines 35-47), fig.2, 250N(first bus devices)
- a first data bus connected to each of said plurality of first bus devices and capable of transferring data from a first bus data supplying device to a first bus data receiving device under control of a first bus master device; (col.5, lines 35-47)

- a plurality of second bus devices different from said plurality of first bus devices, at least one second bus device being a second bus data supplying device capable of supplying data, at least one second bus device being a second bus data receiving device capable of receiving data, a plurality of second bus devices each being a second bus master device capable of requesting and controlling data transfer, a predetermined one of said plurality of second bus devices being a dominant second bus master device; (fig.2, 250H(second bus devices), (col.2, lines 13-16, wherein designated high-priority latency sensitive implies dominant), (col.5, lines 52-61)
- a second data bus different from said first data bus connected to each of said plurality of second bus devices and capable of transferring data from a second bus data supplying device to a second bus data receiving device under control of a second bus master device; (col.5, lines 52-61), (fig.2, col.4, line 42-col.5, line 9)
- a bus bridge connected to said first data bus and said second data bus, said bus bridge capable of supplying data to said first bus, receiving data from said first bus, supplying data to said second bus, receiving data from said second bus, not capable of controlling data transfer on said first bus and capable of controlling data transfer on said second bus; and (col.4, line 42-col.5, line 34), fig.2

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- a second bus arbiter connected to each of said at least one second bus master device, said second bus and said bus bridge, said second bus arbiter granting control of data transfer on said first bus to one and only one of the set of devices including each second bus master and said bus bridge, said second bus arbiter granting control of data transfer to said dominant second bus master immediately upon request and interrupting any data transfer controlled by another second bus master. (col.5, lines 47-61) , (fig.2, col.4, line 42-col.5, line 9)

As per claim 2, Smith discloses wherein: said at least one first bus master device consists of a central processing unit. (fig.1, 224), (col.4, lines 42-67)

As per claim 4, Smith discloses wherein: at least one first bus supplying/receiving device consists of a memory which is not capable of controlling data transfer. (col.6, lines 37-56)

As per claim 5, Smith discloses wherein: each second bus master generates a corresponding bus request signal to said second bus arbiter for second bus to request control of said second bus, said second bus arbiter having grant logic corresponding to each second bus master supplying a bus grant signal to said corresponding bus master upon bus grant, said bus request signal of said dominant bus master supplied to said grant logic corresponding to every other second bus masters for inhibiting generation of said grant request . (col.5, lines 47-61)

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As per claim 6, Smith discloses wherein: said bus arbiter grants control of said second bus to second bus master devices other than dominant bus master in a round robin fashion. (col.5, lines 35-61)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent 6,629,178) in view of Ghodrat et al. (US Patent 6,651,119)

Smith discloses all of the limitations as above except wherein at least one first bus master device consists of a direct memory access unit. However Ghodrat discloses processing data via direct memory access in transferring data between a bus and DMA. The phase of bus along with the status of DMA transactions are monitored. (col.2, lines 15-24)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Ghodrat's teaching into Smith's system so as to maximize the efficiency in processing data. (col.2, lines 15-24)

Allowable Subject Matter

5. Claims 7-11 are allowable

Response to Amendment

6. Applicant's amendment filed on 4/29/04 have been fully considered but are not place application in condition for allowance.

a. In response to applicant's argument that Smith does not disclose or suggest "a first data bus connected to each of said plurality of first bus devices(250, pci, isa or agp bus)" and "a second data bus different from said first data bus connected to each of said plurality of second bus devices(250, pci, isa or agp bus)". Examiner respectfully disagrees. As Smith notes at fig.2, col.4, line 42-col.5, line 9, discloses bus bridge 202 contain any bus interface units, each of which may be connected to a different bus. Bus agents 250 may be various types of peripherals, and may be equivalent to PCI devices 212 (pci bus) or isa device 218(ISA bus) and a bus agent 250 may also be equivalent to graphics controller 208, which is coupled to an AGP bus.

b. In response to applicant's argument that Smith does not disclose or suggest at least one first bus master device consists of a central processing unit. As Smith notes at col.4, lines 42-67, discloses bus arbitration system includes bus bridge 202, which includes bus interface units 251 and arbitration unit 252, and bus bridge 202 contain any number of bus interface units, each of which may be connected to a different bus. Each of bus interfaces have bus arbitration unit and coupled to a plurality of bus agents 250. Bus interface coupled to processor bus 224 for arbitrating of bus agents 250N.

Thus, the prior art teaches the invention as claimed and the amended claims do not distinguish over the prior art as applied.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

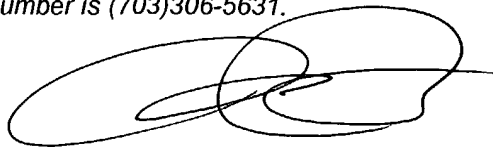
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (703)305-5384 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 8:30AM-6:30PM.*

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815 or via e-mail addressed to [mark.rinehart@uspto.gov]. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5631.

A handwritten signature in black ink, consisting of several overlapping loops and a long horizontal stroke extending to the right.

MARK H. RINEHART
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

Kim Huynh

July 31, 2004